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| **eclipse** | **Physics** | **شعار-القسم** |
| **Worksheet-2-** |
| Energy transformation |

|  |  |
| --- | --- |
| Name: Class: 8 /……........ | |
| Book pages:240-246 | |
| **17-1-2012** | Date: |
| 8.16.2- 8.16.3- 8 | Core Standard number |
| 1. Know the energy transformation in the pendulum and deduce the definition of energy transformation. 2. Know that during energy transformations energy is converted from one form to others but that the total energy remains the same | Learning Objectives  Logo + text 2 |

1. What is a pendulum

A pendulum consists of a cord of length *l* ( the rope is supposed to be mass less) attached to an object of mass m ( the object is supposed to have small dimensions )

pendulum at rest

movement of a pendulum

1. **a-** Consider the movement of the pendulum**.**

A

B

C

D

E

ground

Use the animation to complete the table below :

|  |  |  |  |
| --- | --- | --- | --- |
| **position** | **EK(J)** | **Ep(J)** | **E=Ek + Ep (J)** |
| A | **0** | **0.5** | **0.5** |
| B | **0.125** | **0.375** | **0.5** |
| C | **0.25** | **0.25** | **0.5** |
| D | **0.375** | **0.125** | **0.5** |
| E | **0.5** | **0** | **0.5** |

b- Use the results in the table above to answer the following questions:

1. How do EK and Ep vary when the pendulum is moving from A to E?

**Ek increases, Ep decreases.**

1. How do you explain the result above?

**The kinetic energy is transformed to a gravitational potential energy and inversely. The pendulum is the device that transforms the energy.**

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c- Define energy transformation:

**Energy transformations occur when one type of energy changes to a**

**different types of energy in the same object.**

d-How do EK + Ep vary? What do you conclude?

**EK + Ep remains constant. Total energy of the pendulum is constant**.

e-Deduce the principle of conservation of energy?

**The energy cannot be created or destroyed in any process it can be**

**transformed from one form to another form**.